

CLAIMS

1. A furniture connector comprising:

5 a first furniture-engaging portion including and/or configured to engage a fastening element that is adapted to enable fastening of the first furniture-engaging portion to a first furniture member, the fastening element not being integrally formed with the first furniture-engaging portion; and

10 a second furniture-engaging portion including and/or configured to engage a fastening element that is adapted to enable fastening of the second furniture-engaging portion to a second furniture member, the fastening element not being integrally formed with the second furniture-engaging portion;

the first and second furniture-engaging portions having a shape and thickness selected to enable the first furniture-engaging portion to be matingly engaged with a first groove present within the first furniture member, and to enable the second
15 furniture-engaging portion to be matingly engaged with a second groove present within the second furniture member;

wherein the first and second furniture-engaging portions that include and/or are configured to engage a fastening element are configured to be contained within the first and second grooves.
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2. A furniture connector according to claim 1, in combination with at least one of the first and second furniture members.

3. The furniture connector according to claim 1, in combination with the
25 first and second furniture members.

4. A furniture connector according to claim 3, wherein the furniture members have connecting edges and the grooves are present within the connecting edges.
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5. A combination according to claim 2, wherein the furniture connector is fastened to at least one of the first and second furniture members.

6. A furniture connector according to claim 4, in combination with the first and second furniture members.

7. A furniture connector according to claim 4, further comprising:
a third furniture-engaging portion having a shape and thickness selected to enable the third furniture-engaging portion to be matingly engaged with a third groove present within a third furniture member.

8. A furniture connector according to claim 7, in combination with the first, second and third furniture members.

9. A furniture connector according to claim 7, further comprising:
a fourth furniture-engaging portion having a shape and thickness selected to enable the fourth furniture-engaging portion to be matingly engaged with a fourth groove present within a fourth furniture member.

10. A furniture connector according to claim 9, in combination with the first, second, third and fourth furniture members.

11. A combination according to claim 4, wherein the connecting edge of at least one of the furniture members has a first angled portion forming a smallest angle with respect to an adjacent face of the furniture member of greater than about 90 degrees.

12. A combination according to claim 11, wherein the connecting edge has a thickness and the first angled portion extends less than halfway across the thickness of the connecting edge.

13. A combination according to claim 12, wherein the connecting edge has a second angled portion forming a smallest angle with respect to an adjacent face of the furniture member of greater than about 90 degrees; and
wherein the second angled portion extends less than halfway across the
5 thickness of the connecting edge.

14. A furniture connector according to claim 5, wherein the first and second furniture-engaging portions including and/or configured to engage a fastening element are further configured to enable unfastening of the furniture-engaging
10 portions and the furniture members to which they are fastened.

15. A furniture connector according to claim 1, wherein the first and second furniture-engaging portions including and/or configured to engage a fastening element are further configured to enable fastening of the furniture members without
15 irreversibly changing the structure of the furniture member.

16. A furniture connector according to claim 1, wherein the first furniture-engaging portion comprises a first rail having a shape and thickness selected to enable the rail to be matingly engaged with the first groove present within the first furniture
20 member.

17. A furniture connector according to claim 16, wherein the first rail comprises a first channel.

25 18. A furniture connector according to claim 17, further comprising the fastening element, wherein the fastening element is configured to engage the first channel.

30 19. A furniture connector according to claim 18, wherein the first channel includes at least one undercut side along at least a portion of its length and the fastening element is configured to engage the undercut side of the first channel.

20. A furniture connector according to claim 1, further comprising the fastening element, wherein the fastening element comprises an eccentric piece.

5 21. A furniture connector according to claim 20, wherein the first furniture-engaging portion comprises a channel therein comprising an undercut side along at least a portion of the length of the channel and wherein the eccentric piece is configured to engage the undercut side of the channel present on the first furniture-engaging portion.

10 22. A furniture connector according to claim 1, further comprising the fastening element, wherein the fastening element comprises a hook.

15 23. A furniture connector according to claim 22, wherein the first furniture-engaging portion comprises a catch and wherein the hook is configured to engage the catch present on the first furniture-engaging portion.

20 24. A furniture connector according to claim 7, wherein each furniture-engaging portion is disposed at a right angle to at least one other furniture-engaging portion.

25 25. A furniture connector according to claim 9, wherein each furniture-engaging portion is disposed at a right angle to at least one other furniture-engaging portion.

26. A furniture connector according to claim 16, wherein the first rail further comprises a second channel on an opposite side of the first rail as the side comprising the first channel.

30 27. A furniture connector according to claim 16, wherein the first channel extends along essentially the entire length of the first rail.

28. A furniture connector according to claim 1, wherein each of the first and second furniture-engaging portions is continuous along its own length.

5 29. A furniture connector comprising:

a first furniture-engaging portion and a second furniture-engaging portion, each furniture-engaging portion having a shape, a width and a thickness selected to enable the furniture-engaging portion to be matingly engaged with a groove of a furniture member;

10 each furniture-engaging portion further having a length, the length being greater than the width; wherein

at least one furniture-engaging portion is constructed and arranged to enable it to become fastened to the furniture member using a fastening element without irreversibly changing the structure of the furniture member.

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30. A furniture connector according to claim 29, in combination with at least one of the first and second furniture members.

20 31. The furniture connector according to claim 29, in combination with the first and second furniture members.

32. A furniture connector according to claim 31, wherein the furniture members have connecting edges and the grooves are present within the connecting edges.

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33. A combination according to claim 30 wherein the furniture connector is fastened to at least one of the first and second furniture members.

30 34. A furniture connector according to claim 30, further comprising the fastening element.

35. A furniture connector according to claim 32, further comprising:
a third furniture-engaging portion having a shape and thickness selected to
enable the third furniture-engaging portion to be matingly engaged with a third groove
present within a third furniture member.

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36. A furniture connector according to claim 35, in combination with the
first, second and third furniture members.

37. A furniture connector according to claim 35, further comprising:
a fourth furniture-engaging portion having a shape and thickness selected to
enable the fourth furniture-engaging portion to be matingly engaged with a fourth
groove present within a fourth furniture member.

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38. A furniture connector according to claim 37, in combination with the
first, second, third and fourth furniture members.

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39. A furniture connector according to claim 38, wherein the at least one
furniture-engaging portion is constructed and arranged to enable it to become fastened
to the furniture member without irreversibly changing the structure of the furniture-
engaging portion.

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40. A furniture connector according to claim 30, wherein the first
furniture-engaging portion width is different from the second furniture-engaging
portion width.

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41. A furniture connector according to claim 30, wherein the first
furniture-engaging portion width is essentially the same as the second furniture-
engaging portion width.

42. A furniture connector according to claim 30, wherein the first
furniture-engaging portion comprises a rail having a channel.

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43. A furniture connector according to claim 32, wherein the channel has an undercut side.

5 44. A furniture connector according to claim 34, wherein the fastening element is configured to engage the channel to connect the furniture member to the furniture connector.

45. A furniture connector according to claim 44, wherein the fastening
10 element is configured to engage the undercut side.

46. A furniture connector according to claim 45, wherein the fastening element comprises an eccentric piece, such that upon rotation of the fastening element, the first furniture-engaging portion becomes secured within the groove of the furniture
15 member.

47. A furniture connector according to claim 46, wherein the eccentric piece engages the undercut side.

20 48. A furniture connector according to claim 34, further comprising a fastening element, wherein the first furniture-engaging portion comprises a catch and the fastening element comprises a hook such that rotation of the fastening element engages the hook with the catch to secure the furniture member to the furniture connector.

25 49. A modular furniture system, comprising:
a plurality of furniture members, at least one furniture member thereof having a first face, a second face, and at least one adjacent connecting edge;
a plurality of connectors, at least one connector thereof adapted to interconnect
30 at least two of the furniture members; wherein

at least one connecting edge has a first angled portion thereof that forms a first smallest angle with respect to the first face of greater than about 90 degrees and a second angled portion thereof that forms a second smallest angle with respect to the second face of greater than about 90 degrees.

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50. A modular furniture system according to claim 49, wherein at least one connecting edge has a groove formed therein.

51. A modular furniture system according to claim 49, wherein:
10 at least one furniture member has at least two connecting edges; and
the at least two connecting edges each have a first angled portion thereof that forms a smallest angle with respect to the first face of greater than about 90 degrees, and a second angled portion thereof that forms a smallest angle with respect to the second face of greater than about 90 degrees.

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52. A modular furniture system according to claim 49, wherein at least one connector adapted to interconnect at least two of the furniture members includes at least two furniture-engaging portions, at least one of the furniture-engaging portions having a shape and a thickness selected to enable the furniture-engaging portion to be
20 matingly engaged within a groove present within a connecting edge of the furniture member.

53. A modular furniture system according to claim 52, wherein at least one furniture-engaging portion comprises a rail.

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54. A modular furniture system according to claim 53, wherein the rail is configured to engage a fastening element that is adapted to fasten the furniture member to the rail.

55. A modular furniture system according to claim 54, wherein the rail includes a recessed region having sides configured and positioned to facilitate engagement with the fastening element.

5 56. A modular furniture system according to claim 55, wherein the recessed region is a channel.

57. A modular furniture system according to claim 56, wherein the channel has at least one undercut side.

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58. A kit of parts for assembling furniture, comprising:
a plurality of furniture members, at least one furniture member thereof having at least one groove formed therein;
a plurality of fastening elements;
15 a plurality of furniture connectors, at least one connector comprising at least one furniture-engaging portion having at least a portion thereof including and/or configured to engage at least one of the fastening elements, which at least one fastening element is adapted to enable securing of the furniture-engaging portion at least partially within the groove of a furniture member having a groove formed
20 therein, and being configured to enable fastening and unfastening of at least one connector comprising a furniture-engaging portion to the furniture member; and
instructions directing a user to insert the furniture-engaging portion at least partially into the groove and fasten the furniture-engaging portion to a furniture member having a groove formed therein with at least one of the fastening elements.

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59. A kit of parts according to claim 61 wherein at least one furniture member comprises at least one connecting edge and wherein at least one groove is formed within a connecting edge of a furniture member.

30 60. A kit of parts according to claim 58, wherein the connector comprises multiple furniture-engaging portions to interconnect multiple furniture members.

61. A kit of parts according to claim 60, wherein the multiple furniture-engaging portions comprise rails.

5 62. A kit of parts according to claim 58, further comprising instructions directing the user how to unfasten a furniture-engaging portion from a furniture member and to remove the furniture-engaging portion from a groove of such furniture member.

10 63. A kit of parts according to claim 62, wherein the instructions further instruct the user how to assemble the kit of parts in to furniture assemblies of various configurations.

15 64. A kit of parts according to claim 58, wherein the fastening element comprises an eccentric piece configured to engage the furniture-engaging portion.

 65. A kit of parts according to claim 58, wherein the fastening element comprises a hook configured to engage the furniture-engaging portion.

20 66. A kit of parts according to claim 58, wherein at least one of the plurality of furniture members include adapters configured to permit connection of at least one of door hinges, sliding doors, shelving, feet, wheels and handles.

25 67. A kit of parts for assembling furniture that can be readily disassembled and reassembled comprising:

 a plurality of furniture members;

 a plurality of furniture connectors, at least one connector thereof having first and second furniture-engaging portions, each furniture-engaging portion having a length and a width, the length being greater than the width;

30 instructions directing a user to assemble the connectors and furniture members into a first configuration of a plurality of assembly configurations;

instructions directing the user to disassemble the first configuration;
and

instructions directing the user to assemble the connectors and furniture
members into a second configuration of the plurality of assembly configurations.

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68. A kit of parts according to claim 58, wherein the furniture members
include grooves configured to facilitate mating engagement with the furniture-
engaging portions.

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69. A method comprising acts of:

interconnecting a plurality of furniture members with at least one
furniture connector comprising a plurality of furniture-engaging portions to form a
piece of furniture of a first configuration;

dismantling the piece of furniture; and

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interconnecting the plurality of furniture members with at least one
furniture connector to form a piece of furniture of a second configuration.

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70. A method according to claim 69, wherein the act of interconnecting a
plurality of furniture members to form a piece of furniture of a first configuration
comprises:

inserting a first furniture-engaging portion into a groove present within a first
furniture member;

fastening the first furniture member to the first furniture-engaging portion
without irreversibly changing the structure of the first furniture member;

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inserting a second furniture-engaging portion into a groove present within a
second furniture member;

fastening the second furniture member to the second furniture-engaging
portion without irreversibly changing the structure of the second furniture member.

71. A method according to claim 70, wherein the act of fastening the first furniture member to the first furniture-engaging portion comprises engaging a fastening element with a recess in the first furniture-engaging portion.

5 72. A method according to claim 71, wherein the act of fastening the first furniture member to the first furniture-engaging portion further comprises rotating a cam surface of the fastening element to secure the first furniture-engaging portion in the groove of the first furniture member.

10 73. A method according to claim 70, wherein the act of inserting a first furniture-engaging portion into the groove present within the first furniture member comprises inserting a rail comprising at least a portion of the first furniture-engaging portion into the groove.

15 74. A method according to claim 73, wherein the act of fastening the first furniture member to the first furniture-engaging portion comprises engaging a fastening element with a channel in the rail.

20 75. A furniture assembly system comprising:
a plurality of furniture members; and
means for interconnecting and disconnecting the furniture members.

76. A method comprising acts of:
providing a plurality of furniture connectors, each having a first furniture-
25 engaging portion and a second furniture-engaging portion;
providing a plurality of furniture members, each having a groove;
matingly engaging the first furniture-engaging portion with the groove of a
first furniture member of the plurality of furniture members;
fastening the first furniture member to the first furniture-engaging portion by
30 engaging a first fastening element with a section of the furniture-engaging portion that
is contained within the groove;

matingly engaging the second furniture-engaging portion with the groove of a second furniture member of the plurality of furniture members; and

 fastening the second furniture member to the second furniture-engaging portion by engaging a second fastening element with a section of the furniture-engaging portion that is contained within the groove.

77. A method according to claim 76, wherein the act of matingly engaging the first furniture-engaging portion with the groove of a first furniture member of the plurality of furniture members comprises inserting a rail comprising at least a portion of the first furniture-engaging portion into the groove of the first furniture member.

78. A method according to claim 76, further comprising an act of:
 matingly engaging additional furniture-engaging portions of the plurality of furniture connectors with additional furniture members to form a furniture assembly in a first configuration.

79. A method according to claim 78, further comprising acts of:
 unfastening the first furniture member from the first furniture-engaging portion without structurally altering the first furniture-engaging portion or the first furniture member;
 removing the first furniture-engaging portion from the first groove;
 unfastening the second furniture member from the second furniture-engaging portion without structurally altering the second furniture portion or the second furniture member; and
 removing the second furniture-engaging portion from the second groove.

80. A furniture connector comprising:
 a first furniture-engaging portion including and/or configured to engage a fastening element that is adapted to enable fastening of the first furniture-engaging portion to a first furniture member; and

a second furniture-engaging portion including and/or configured to engage a fastening element that is adapted to enable fastening of the second furniture-engaging portion to a second furniture member;

5 the first and second furniture-engaging portions having a shape and thickness selected to enable the first furniture-engaging portion to be matingly engaged with a first groove present within the first furniture member, and to enable the second furniture-engaging portion to be matingly engaged with a second groove present within the second furniture member;

10 wherein the first furniture-engaging portion comprises a rail having a channel.

81. A furniture connector as in claim 80, wherein the channel extends along substantially the entire length of the rail.

15 82. A furniture connector as in claim 80, wherein the channel is a recessed portion of the rail having a bottom and two sides.